BioDiscovery 20: e14958
doi: 10.3897/biodiscovery.20.e14958

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Conference Abstract

Synthesis of a drug discovery library for the identification of sigma receptors modulators

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Received: 10 Jul 2017 | Published: 17 Jul 2017

Citation: Rossino G, Rui M, Di Giacomo M, Rossi D, Collina S (2017) Synthesis of a drug discovery library for the identification of sigma receptors modulators. BioDiscovery 20: e14958.
https://doi.org/10.3897/biodiscovery.20.e14958

Abstract

Sigma Receptors (SR) have been proposed as a valuable molecular target for the treatment of various diseases. Specifically, S1 receptor is mainly involved in neurodegenerative pathologiesCollina et al. 2013, Rossi et al. 2013b, while S2 receptor is related to cancerCollina et al. 2017. In the last years our research has been focused on the design, synthesis and pharmacological evaluation of new potential SR modulators based on arylalkenyl- and arylalkyl-aminic and (N-alkylaminoalkyl-substituted) arylalkenylamidic scaffoldsUrbano et al. 2007, Rossi et al. 2011, Rossi et al. 2013a, Marra et al. 2016. As a continuation of our ongoing research in the sigma field, herein we report on the design and preparation of a discovery library based on a new scaffold. The library design was carried out taking into account the synthetic feasibility, the commercial availability of building blocks as well as molecular modeling suggestions. Thus, an efficient and easy-to-use protocol, based on combined Microwave Assisted Organic Synthesis (MAOS), Polymer Assisted Solution Phase Synthesis (PASPS) and Solid Phase Extraction (SPE) was developed. Interestingly, the optimized procedure led us to prepare the designed library compounds with a purity > 95% suitable for biological screening.

Synthetic procedures applied for the preparation of desired compounds as well as preliminary binding data will be presented and discussed.

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Keywords

Sigma 1 Receptor, Drug Discovery, Microwave Assisted Organic Synthesis, Polymer Assisted Solution Phase Synthesis, Solid Phase Extraction

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Presented at

World BioDiscovery Congress 2017

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